Homeostasis

A-Level Biology · Vocabulary in context

Word	Example
homeostasis /ˌhəʊmiːəˈstɑːsiz/	Sweating is part of **homeostasis**: it keeps body temperature steady.
stimulus /ˈstɪmjʊləs/	A hot plate is a **stimulus**.
receptor /rɪˈseptə/	A hormone fits into a **receptor** on the cell surface.
nervous system /ˈnɜːvəs ˈsɪstəm/	The **nervous system** carries fast messages.
endocrine system /ˈendəʊkraɪn ˈsɪstəm/	The **endocrine system** uses hormones to send messages in the blood.
hormone /ˈhɔːməʊn/	Insulin is a **hormone**.
effector /ɪˈfektə/	A muscle is an **effector**.
gland /glænd/	A sweat **gland** makes sweat.
negative feedback /ˈnegətɪv ˈfiːdbæk/	**Negative feedback** brings body temperature back to normal.
liver /ˈlɪvə/	The **liver** makes bile.
deamination /ˌdiːmɪˈneɪʃn/	**Deamination** turns extra amino acids into urea in the liver.
amino acid /əˈmiːnəʊ ˈæsɪd/	Glycine is the simplest **amino acid**.
urea /juːˈrɪə/	The liver makes **urea**.

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excretion /ekˈskreʃn/	The kidneys carry out **excretion** of urea.
kidney /ˈkɪdni/	Each **kidney** filters the blood and makes urine.
cortex /ˈkɔːteks/	The **cortex** is the outer layer of the kidney.
medulla /ˈmedʌlə/	The **medulla** is the inner part of the kidney.
renal pelvis /ˈriːnl ˈpelvɪs/	Urine collects in the **renal pelvis** before it leaves the kidney.
ureter /ˈjʊəretə/	The **ureter** carries urine from the kidney to the bladder.
nephron /ˈnefrɒn/	Each kidney has about a million tiny tubes, each one a **nephron**.
glomerulus /ˈglɒmərjʊləs/	The **glomerulus** filters the blood.
Bowman's capsule /ˈbəʊmənz ˈkæpsjuːl/	**Bowman's capsule** is the cup at the start of the nephron that catches the filtered fluid.
proximal convoluted tubule /ˈprɒksɪml ˌkɒnvəˈluːtɪd ˈtjuːbjuːl/	The **proximal convoluted tubule** takes back all the glucose into the blood.
loop of Henle /luːp ɒv ˈhenl/	The **loop of Henle** helps the kidney save water.
distal convoluted tubule /dɪˈstæl ˌkɒnvəˈluːtɪd ˈtjuːbjuːl/	The **distal convoluted tubule** adjusts the amount of salt in the urine.
collecting duct /kəˈlektɪŋ dʌkt/	The **collecting duct** takes back more water when the body needs it.

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ultrafiltration /ˌʊltrəfɪl'treɪʃn/	In **ultrafiltration**, high blood pressure pushes small molecules out of the blood.
glucose /'glu:kəʊs/	Cells use **glucose** for energy.
ion /'aɪɒn/	An **ion** is an atom that has gained or lost electrons.
filtrate /'fɪltreɪt/	The **filtrate** contains water, glucose and urea.
selective reabsorption /sɪ'lektɪv ri:b'sɔ:pʃn/	In **selective reabsorption**, useful things like glucose go back into the blood.
microvilli /'maɪkrəʊvɪlaɪ/	**Microvilli** make the surface area even larger.
mitochondria /ˌmaɪtə'kɒndrɪə/	**Mitochondria** release energy from food.
active transport /'æktɪv 'trænspɔ:t/	**Active transport** uses energy to move ions into root cells.
endothelium /ˌendəʊ'θi:lɪəm/	The **endothelium** is the thin, smooth layer of cells on the inside of every blood vessel.
basement membrane	The **basement membrane** is a fine net that stops proteins leaving the blood.
podocytes	**Podocytes** are cells with many small feet that wrap around the blood vessels.
countercurrent multiplier	The loop of Henle works as a **countercurrent multiplier**: two flows in opposite directions build up salt.
co-transport	In **co-transport**, sodium moving into the cell drags glucose in with it.

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co-transporter protein	A **co-transporter protein** carries two different molecules across the membrane together.
osmosis /ɒz'məʊsɪs/	Water enters the root by **osmosis**.
osmoregulation /ˌɒzmɔ:gjʊ'leɪʃn/	**Osmoregulation** keeps the right amount of water in the body.
hypothalamus /ˌhaɪpəʊ'θælæməs/	The **hypothalamus** in the brain checks the water level of the blood.
water potential /'wɔ:tə pə'tenʃl/	Water moves from high **water potential** to low water potential.
pituitary gland /pɪ'tju:ɪtəri glænd/	The **pituitary gland** is at the base of the brain.
antidiuretic hormone /ˌæntɪˌdɪju:'retɪk 'hɔ:məʊn/	**Antidiuretic hormone** makes the kidneys save water, so urine is darker.
aquaporin /'ækwəpɔ:rɪn/	An **aquaporin** is a channel that lets water pass through the membrane quickly.
glucagon /'glu:kægən/	**Glucagon** raises the level of sugar in the blood.
cell signalling /sel 'sɪgnəlɪŋ/	Hormones are one kind of **cell signalling**: one cell sends a message to another.
conformational change /kɒnfɔ:'meɪʃənl tʃeɪndʒ/	When a hormone binds, the receptor goes through a **conformational change**: its shape changes.
G-protein /dʒi: 'prəʊti:n/	A **G-protein** passes the signal from the receptor to an enzyme inside the cell.
adenylyl cyclase /'ædənɪlɪl 'saɪkleɪz/	**Adenylyl cyclase** turns ATP into cyclic AMP. ATP

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second messenger /ˈsekənd ˈmesɪndʒə/	Cyclic AMP is a **second messenger**: it carries the signal inside the cell.
cyclic AMP /ˈsaɪklɪk ˌeɪ em ˈpiː/	**Cyclic AMP** passes the hormone's message on inside the cell.
protein kinase A /ˈprəʊtiːn ˈkɪneɪs eɪ/	Cyclic AMP switches on **protein kinase A**.
enzyme cascade /ˈenzaɪm kəˈskeɪd/	In an **enzyme cascade**, each enzyme switches on many more, so the signal grows.
enzyme /ˈenzaɪm/	The **enzyme** speeds up the reaction.
phosphorylation /ˌfɒsfɔːrɪˈleɪʃn/	In **phosphorylation**, a phosphate group is added to a molecule, such as ADP to make ATP. ADP ATP
amplification /ˌæmplɪfɪˈkeɪʃn/	Because of **amplification**, one hormone molecule can release millions of glucose molecules.
glycogen /ˈglaɪkədʒn/	The liver stores **glycogen**.
insulin /ˈɪnsjuːlɪn/	**Insulin** lowers the level of sugar in the blood.
islets of Langerhans	The **islets of Langerhans** are groups of cells in the pancreas that make insulin and glucagon.
glycogenesis	In **glycogenesis**, the liver turns glucose into glycogen to store it.
glycogenolysis	In **glycogenolysis**, the liver breaks glycogen down into glucose.

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Word	Example
gluconeogenesis	In **gluconeogenesis**, the liver makes new glucose from amino acids or fat.
test strip /test strɪp/	A **test strip** changes colour when glucose is in the urine.
biosensor /ˌbaɪəʊˈsensə/	A **biosensor** uses an enzyme to measure blood glucose.
glucose oxidase /ˈgluːkəʊs ˈɒksɪdeɪs/	**Glucose oxidase** is the enzyme in glucose test strips.
peroxidase /ˈperɒksɪdeɪs/	**Peroxidase** makes the dye on the strip change colour.
stomata /ˈstəʊmətə/	Gases enter the leaf through the **stomata**.
carbon dioxide /ˈkɑːbən daɪˈɒksaɪd/	We breathe out **carbon dioxide**.
photosynthesis /ˌfəʊtəʊˈsɪnθəsɪs/	Plants make sugar by **photosynthesis**.
transpiration /trænspəˈreɪʃn/	**Transpiration** is the loss of water from leaves.
guard cell /gɑːd sel/	Each stoma is surrounded by two **guard cells** that open and close it.
water stress /ˈwɔːtə stres/	In a drought, plants suffer **water stress**.
abscisic acid /əbˈsɪzɪk ˈæsɪd/	**Abscisic acid** makes stomata close when the plant is short of water.
calcium ion /ˈkælsɪəm ˈaɪɒn/	A **calcium ion**, Ca^{2+}, triggers muscle contraction. Ca^{2+}

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